MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for March, 1905, is based on data from about 3583 stations, classified as follows:

Weather Bureau stations, regular, telegraph, and mail, 176; West Indian Service, cable and mail, 4; River and Flood Service, regular 52, special river and rainfall, 363, special rainfall only, 98; cooperative observers, domestic and foreign, 2565; total Weather Bureau Service, 3258; Canadian Meteorological Service, by telegraph and mail, 33; Meteorological Service of the Azores, by cable, 2; Meteorological Office, London, by cable, 8; Mexican Telegraph Company, by cable, 3; Army Post Hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Company, 96; Hawaiian Meteorological Service, 1; Jamaica Weather Service, 130; Costa Rican Meteorological Service, 25. Total, 3583.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; Lieut. Commander H. M. Hodges, Hydrographer, United States Navy; H. Pittier, Director of the Physico-Geographic Institute, San José, Costa Rica; Commandant Francisco S. Chaves, Director of the Meteorological Service of the Azores, Ponta Delgada, St. Michaels, Azores; W. N. Shaw, Esq., Secretary, Meteorological Office, London; H. H. Cousins, Chemist, in charge of the Jamaica Weather Office; and Señor Enrique A. Del Monte, Director of the Meteorological Service of the Republic of Cuba.

Attention is called to the fact that at regular Weather Bureau stations all data intended for the Central Office at Washington are recorded on seventy-fifth meridian or eastern standard time, except that hourly records of wind velocity and direction, temperature, and sunshine are entered on the respective local standards of time. As far as practicable, only the seventy-fifth meridian standard of time, which is exactly five hours behind Greenwich time, is used in the text of the REVIEW. The standards used by the public in the United States and Canada and by the cooperative observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is 157° 30′, or $10^h\ 30^m$ west of Greenwich. The Costa Rican standard meridian is that of San José, $5^h\ 36^m$ west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by cooperative observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

Barometric pressures, whether "station pressures" or "sea-level pressures," are now reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

Since December, 1904, the Weather Bureau has received an average of about 1700 reports from as many observers and vessels, giving international simultaneous ovservations over the Atlantic and Pacific oceans at 12 noon, Greenwich time, or 7 a. m., seventy-fifth meridian time. These are charted, and, with the corresponding land observations, will form the framework for daily weather charts of the globe.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

Barometric pressures were prevailingly low over the eastern part of the North Atlantic Ocean, and the severest storm of the month in that region visited the British coasts from the 13th to 15th. In the vicinity of the Azores pressures were high during the first decade of March, and were relatively high from the 19th to 21st and on the 31st. During the second and the greater part of the third decade, low pressures over the Azores attended the passage of storms, in several instances severe, in the higher latitudes of the ocean. Near the American coast the passage eastward of barometric depressions caused a rather regular alternation of high and low pressures.

In the United States March was a mild month, and over a great part of the interior of the country east of the Rocky Mountains the monthly average temperature was 3° to 12° above the normal. The excessive rains in Arizona and southern California, where two to three inches more than the monthly average precipitation fell, were a notable feature of the month. Farming operations were retarded in that region, and floods, largely from melting snow, caused serious washouts.

The month opened with a heavy snowstorm for the season over a small area of the Middle Atlantic States, the greatest depth, three inches, being measured at Washington, D. C. From the 4th to 10th a rainstorm advanced from the Middle West and Southwest to the Atlantic coast. Heavy rains and high winds set in over California and Arizona on the 12th and continued in that section during the 13th. The Pacific rain area extended eastward over Texas from the 14th to the 17th, and reached the Atlantic coast on the 19th where it continued through the 21st, attended by freshets in rivers and streams of the central, southern, and eastern districts, descriptions of which are given under the heading Rivers and Floods.

The Atlantic and Gulf coasts were not visited by windstorms of notable severity. Gales of moderate strength occurred on the north Atlantic coast on the 21st and 22d, and on the upper Lakes on the 3d, 19th, and during the night of the 25th. Unusually severe gales prevailed along the Pacific coast on the 12th, and on the north Pacific coast during the early part of the 13th, and on the 20th, 23d, and 25th.

The occurrence of damaging frost was not noted in Florida or along the Gulf coast. Frost warnings were issued for the interior of California on the 29th and 30th.

NEW ENGLAND FORECAST DISTRICT.

The only storm of consequence was that of the 21st and 22d, during which a fierce northeaster prevailed along the entire coast. Incoming steamers and sailing vessels reported high seas and head winds, while from along the shore came reports of minor disasters. Out of a fleet of sixteen fishing vessels at